REMARKS

Summary

Claims 1 and 3 were pending. All pending Claims were rejected in the Office action. Claim 1 has been amended. No new matter has been added. Claims 1 and 3 are now pending. Applicants have carefully considered the reasons advanced by the Examiner and respectfully traverse the rejections in view of the discussion presented below.

Claim Amendment

Claim 1 has been amended to correct an error where the sense of rotation in the original description and that of the previously amended claim were in conflict. Support for this correction is found at page 5 lines 23-25, taking account of the appropriate sense of rotation.

Rejection of Claims

Claims 1 and 3 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Yamaguchi et al. (US 6,067,136; "Yamaguchi"). For the reasons given below, Applicants submit that the necessary *prima facia* case has not been made out by the Examiner.

Rejections under 35 U.S.C. § 103(a)

The Examiner has rejected Claims 1 and 3 over Yamaguchi, as being obvious to one having ordinary skill in the art at the time the invention was made.

In the Office action, at page 3, lines 1-2 the Examiner characterizes element 14 of Fig. 1 of the reference as "a black layer (a light absorbing layer 14)." Whereas Yamaguchi at column 6, lines 15-17, describes this element as "[t]he translucent absorbing film 14....' and at column 8, lines 5-9, "[h]alf the transmitted light is absorbed by the translucent absorbing film...." The Applicant submits that a translucent film, attenuating only fifty percent of the incident light is not the same as a black absorbing layer, and this would be clearly recognized by one skilled in the art. Hence the reference

does not teach or suggest, as in the arrangement of Claim 1, "a black layer of an acrylic resin as a light absorbing layer...."

In the paragraph commencing on page 2, line 9 of the Office action, it is asserted that "...it is notoriously well known in the art that black layer of an acrylic resin based material is one of such materials commonly used for the light absorbing layer...." In order to make a case of *prima facia* obviousness, it must at least be shown that the reference can be modified in accordance with the suggestion in another reference or in accordance with the skill of an ordinary practitioner in the art. The resultant combination must also be operable. If a black layer of acrylic material was substituted for the translucent absorber of Yamaguchi, the light emitted from the back light 15 would be prevented from being used to illuminate the display as taught by Yamaguchi and the apparatus would not be operable. As such there is no suggestion or motivation to make the modification suggested by the examiner. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The Applicant requests that, in accordance with 37 CFR 1.104(d)(2), if the foregoing arguments are not accepted, that the Examiner provide specific relevant evidence regarding the assertion that the black layer of an acrylic resin material is commonly used for the light absorbing layer in a liquid crystal display.

Additionally, the Applicant submits that the present invention is distinguished from Yamaguchi, as the arrangement of amended Claim 1 recites:

> ...the delay axis of the phase plate differs from an alignment direction of the second alignment layer on the second transparent substrate by an angle in a range of -65° to -85° in the counterclockwise direction ...
>
> an absorption axis of the reflecting polarizing film in the transparent scattering layer differs from an alignment direction of the alignment layer of the first transparent substrate at by angle in a range of -305° to -325° in a clockwise direction..., [and]
>
> an absorption axis of the polarizing plate differs from a delay axis of the phase plate by an angle in a range of -40° to -60° in a counterclockwise direction...."

By applying the combination of the angles recited above, the effect that lightness of pictures is enhanced and colors are displayed clearly.

Characteristic	Present Invention (Fig. 2)	Fig. 2 of Cited Reference	Fig. 8 of Cited Reference
Angle of delay axis of phase plate relative to alignment direction of second alignment layer	-65° to -85° cc* (-75° in Fig 2)	Not Described	-95° cc or -275° cc
Angle of absorption axis of reflecting polarizing film in transparent scattering layer relative to alignment of first alignment layer	-305° to -325° cc (+35° to +55° cc) (-315° in Fig. 2)	-135° cc or -315° cc	-150° cc or -330° cc
Angle of absorption axis of polarizing plate relative to delay axis of phase plate	-40° to -60° cc (-50° in Fig. 2)	Not Described	-135° cc or -315° cc

cc: counterclockwise

Table 1. A comparison of alignment angles between the present invention and the cited reference.

Table 1 summarizes a comparison of the recitation of Claim 1 with the teachings of Yamaguchi. To assist in visualizing these complex angular relationships, a copy of each of the figures referred to in Table 1 is appended. The figures have been marked up, consistent with the written description of the reference and the present application, so as to emphasize the elements needed to interpret the data shown in the table. In particular, the projection of certain axes from one plane to the adjacent plane has been done and the annotation indicates the projected line by using a dashed line to call it out. There exists a difference in the terminology in some instances between the reference and the present application, but the corresponding structures have been identified such that the angles mentioned can be confirmed. The result of this comparison demonstrates that the angular relationships of the arrangement of Claim 1 are either not taught by the reference, or they are taught away from. As such, the reference does not teach every element of Applicant's Claim 1 alone or in combination with other art, nor is there any suggestion or motivation to modify Yamaguchi to reach the present invention. Therefore, Yamaguchi cannot be utilized to make out a *prima facia* case of obviousness.

Claim 3 is dependent on Claim 1 and since Applicant submits that Claim 1 is allowable in view of the arguments presented, Claim 3 is similarly allowable. *Ex parte Ligh*, 159 USPQ (BNA) 61, 62 (Board of Patent Appeals and Interferences, 1967). (When any claim is allowed, all dependent claims can be allowed without further examination for novelty or obviousness, other to make sure that they are dependent claims and satisfy 35 U.S.C § 112.)

For at least the reasons given above, the Applicant respectfully traverses the Office action and submits that Claims 1 and 3 are allowable.

Conclusion

In view of the arguments presented above, Applicants respectfully request that the rejection of Claims 1 and 3 be withdrawn, and that a timely notice of allowance issue. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is Appendix A.

The Examiner is respectfully requested to contact the undersigned in the event that a telephone interview would expedite consideration of the application.

Respectfully submitted,

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Appendix A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please rewrite Claim 1 as follows:

1. (Four times Amended) A reflection liquid crystal display comprising:

a first transparent substrate;

a second transparent substrate disposed opposite to the first transparent substrate;

a liquid crystal layer sandwiched between the first and the second transparent substrates;

a first transparent electrode layer formed on an inner surface of the first transparent substrate;

a first alignment layer formed on the first transparent electrode layer;

a reflecting polarizing film including a laminated combination of a transparent scattering layer composed of a polyester resin and a black layer of an acrylic resin as a light absorbing layer, the reflecting polarizing film being disposed on an outer surface of the first transparent substrate with the black layer formed as an outermost layer of the reflecting polarizing film;

a second transparent electrode layer formed on an inner surface of the second transparent substrate;

a second alignment layer formed on the second transparent electrode layer;

a phase plate placed on an outer surface of the second transparent substrate; and

a polarizing plate disposed on the phase plate,

wherein the liquid crystal layer has a helical structure twisted through an angle in the range of 240° to 260° in a direction of a thickness of the liquid crystal layer,

a value $\Delta n_1 d_1$ which is a product of Δn_1 and d_1, where Δn_1 is an index anisotropy of the phase plate and d_1 is a thickness of the phase plate, is in the range of 1000 to 2000 nm,

a value Δnd which is a product of Δn and d, where Δn is an index anisotropy of the liquid crystal and d is a thickness of the liquid crystal layer, is in the range of 800 to 1800 nm,

an absorption axis of the polarizing plate differs from a delay axis of the phase plate by an angle in a range of -40° to -60° in a counterclockwise direction as viewed from an incident light side, the delay axis of the phase plate differs from an alignment direction of the second alignment layer on the second transparent substrate by an angle in a range of -65° to -85° in the counterclockwise direction as viewed in from the incident light side, and an absorption axis of the reflecting polarizing film in the transparent scattering layer differs from an alignment direction of the alignment layer of the first transparent substrate at by angle in a range of -305° to -325° in a clockwise direction as viewed from the incident light side.

wherein the liquid crystal layer has a helical structure twisted through an angle in the range of 240° to 260° in a direction of a thickness of the liquid crystal layer,

a value $\Delta n_1 d_1$ which is a product of Δn_1 and d_1, where Δn_1 is an index anisotropy of the phase plate and d_1 is a thickness of the phase plate, is in the range of 1000 to 2000 nm,

a value Δnd which is a product of Δn and d, where Δn is an index anisotropy of the liquid crystal and d is a thickness of the liquid crystal layer, is in the range of 800 to 1800 nm,

an absorption axis of the polarizing plate differs from a delay axis of the phase plate by an angle in a range of -40° to -60° in a counterclockwise direction as viewed from an incident light side, the delay axis of the phase plate differs from an alignment direction of the second alignment layer on the second transparent substrate by an angle in a range of -65° to -85° in the counterclockwise direction as viewed in from the incident light side, and an absorption axis of the reflecting polarizing film in the transparent scattering layer differs from an alignment direction of the alignment layer of

the first transparent substrate at by angle in a range of -305° to -325° in a ~~clockwise~~ counterclockwise direction as viewed from the incident light side.